04 04 50 58	CDR	Roger. All zeros, all zeros. Okay. On star number 7, we missed the trunnion on marks 1, 2, and 3.
04 04 55 13	CDR	On 1, trunnion was 03235; on 2, it was 03240; on 3, it was 03241.
04 04 55 31	CC	Okay, Frank. And then the last one is on star number 1; we missed the trunnion on mark 5.
04 04 55 41	CDR	04064.
04 04 55 46	CC	Roger. 04064.
04 04 55 53	CDR	Righto.
04 04 55 55	CC	Thank you, Frank.
04 04 55 58	CDR	You're welcome, Jerry.
04 04 56 00	CC	That Lovell's getting pretty proficient.
04 04 56 07	CDR	Not bad.
04 04 57 41	CC	Apollo 8, Houston.
04 04 57 46	CDR	Go ahead.
04 04 57 47	CC	Was that last number you read down to me mark 2 on star number 1?
04 04 56 59	CDR	That's right. Star number 1, mark 2.
04 04 58 03	CC	Roger. Thank you. Now that one got you on guidance.
04 04 58 16	CDR	Okay.
04 05 03 10	CC	Apollo 8, Houston. You're back under our influence again. Over.
04 05 03 16	CDR	Very good. Things start speeding up now, huh?
04 05 03 21	CC	Roger. You've been in for about 20 minutes.
04 05 03 26	CDR	Very good.

04 05 03 29	CMP	Jerry, this is Jim.
04 05 03 31	CC	Go ahead, Jim.
04 05 03 35	CMP	Find out from the Guidance group if a midcourse maneuver of minus 4.8 to access corridor at 14 hours would be better than the 15.2 I came up with first.
04 05 03 47	CC	Okay. Minus 4.8.
04 05 03 52	CMP	Right.
04 05 03 54	CC	We have already started checking it, Jim. I bet you think you sneaked that P37 past us.
04 05 04 06	CMP	Big brother is watching.
04 05 04 09	CC	Affirm.
04 05 12 29	CDR	Houston, Apollo 8.
04 05 12 32	CC	Apollo 8, Houston. Go.
04 05 12 43	CC	Apollo 8, Houston. Go.
04 05 12 47	CDR	Roger. I just wondered how temp on quad A tank is doing.
04 05 12 54	CC	We have seen no improvement as yet, Frank.
04 05 13 00	CDR	How hot is it?
04 05 13 03	CC	Eighty-six degrees.
04 05 13 07	CDR	Roger.
04 05 17 28	CC	Apollo 8, Houston.
04 05 17 32	CDR	Go ahead.
04 05 17 34	CC	Roger. Frank, we are going to establish a range sequence now. We would like to keep silence on the net for about 3 minutes. Over.
04 05 17 44	CDR	Very well.

04 05 21 21	CC	Apollo 8, Houston. Range sequence complete. Over.
04 05 21 26	CDR	Thank you.
04 05 28 13	CDR	Hello, Houston. Apollo 8. How do you read?
04 05 28 16	CC	Apollo 8, Houston. Loud and clear.
04 05 29 11	CDR	Houston, how do you read? Apollo 8.
04 05 29 14	CC	Apollo 8, Houston. Loud and clear by me.
04 05 29 19	CDR	I wasn't reading you for a while. I read you loud and clear now.
04 05 29 22	CC	Roger, Frank.
04 05 29 28	CDR	I wanted to know what a range sequence test was, Jerry.
04 05 29 35	CC	I was afraid you was going to ask that. Stand by.
04 05 30 53	CC	Apollo 8, Houston.
04 05 30 57	CDR	Go ahead.
04 05 30 59	CC	Roger. This range sequence is a phenomenon. We get on down-voice backup; in this mode, the ranging and the voice share the same channels, so we have to periodically check and make sure that they are not interfering with each other. Over.
04 05 31 16	CDR	Thank you. These flights are very educational.
04 05 31 28	CC	Roger. We are learning a little bit down here, too.
04 05 31 38	CDR	I hope you're not studying reentry.

04 05 31 46	CC	No, we're fat on those, Frank.
04 05 31 51	CDR	Okay.
04 05 39 12	CC	Apollo 8, Houston.
04 05 39 16	CDR	Go ahead, Houston.
04 05 39 18	CC	Roger, Frank. We would like for you to go back into PTC now. Your helium tank temperature is still holding about the same. And we are going to try PTC to even things out. Over.
04 05 39 32	CDR	Okay.
04 05 40 49	CC	Apollo 8, Houston.
04 05 40 53	CDR	Go ahead, Houston.
04 05 40 54	CC	Is Jim listening?
04 05 40 58	CDR	He's off the air right now.
04 05 41 01	CC	Roger, Frank. Let him know that we've compared his latest P37, and the state vectors have converged to - they are very, very close now.
04 05 41 13	CDR	Your state vector and our state vector are very, very close.
04 05 41 16	CC	That's affirmative, Frank.
04 05 41 18	CDR	Is that right, Jerry? Okay. I'll tell him. Thank you.
04 05 41 21	CC	Roger.
04 05 41 27	CC	Don't let his head get big, though.
04 05 41 32	CDR	You guys are going to make it impossible to live with him. It always was pretty hard.

END OF TAPE

04 05 51 03	CDR	Houston. How do you read Apollo 8?
04 05 51 09	CC	Apollo 8, Houston. Say again.
04 05 51 13	CDR	Hello Michael, we lost lock and Bill hit COMMAND RESET to get the lock back on again, but you're welcome to the antenna.
04 05 51 21	CC	Okay, Frank. Thank you.
04 06 07 02	CDR	Houston, Apollo 8. Over.
04 06 07 08	CC	Apollo 8, this is Houston. Go ahead.
04 06 07 13	LMP	Good morning, Michael.
04 06 07 15	CC	Good morning.
04 06 07 17	LMP	Or is it afternoon?
04 06 07 23	CC	Apollo 8, Houston. You've got a lot of background noise and about unreadable. We're trying to get a better OMNI.
04 06 07 45	CC	Apollo 8, Houston. How do you read? Over.
04 06 07 50	LMP	Loud and clear.
04 06 07 51	CC	Okay. You're loud and clear. Is this Bill?
04 06 07 57	LMP	None other.
04 06 07 58	CC	I got a message for you while you were asleep. Valerie said to tell you that she and the kids are leaving for church about 11:30 and eagerly awaiting your return. She said presents are magically starting to appear under the Christmas tree again so it looks like a double barrel Christmas. Over.

04 06 08 16	LMP	You can't beat a deal like that. How was Christmas at your house today?
04 06 08 26	CC	Early and busy as usual. I told Michael you guys are up there, and he said who's driving?
04 06 08 39	LMP	That's a good question. I think Isaac Newton is doing most of the driving right now.
04 06 08 51	CC	Say again.
04 06 08 55	LMP	I think Isaac Newton is doing most of the driving right now.
04 06 08 59	CC	Roger. We copy.
04 06 09 40	LMP	Tell Valerie and the kids a Merry Christmas for me, Mike, and tell them I'll see them there in a while.
04 06 09 46	CC	I sure will, and you might tell Frank if he's got any messages his people are about 10 feet away.
04 06 09 57	LMP	He said "bah humbug."
04 06 10 01	CDR	Howdy, how are you all?
04 06 10 06	CC	You've got a whole row of smiling faces in the back room, Frank.
04 06 10 11	CDR	Very good. Will they be proud of me: I'm using the Exer-Genie right now.
04 06 10 19	CC	Don't overdo it.
04 06 10 23	CDR	I won't.
04 06 15 54	CC	Apollo 8, Houston. Over.
04 06 15 59	LMP	Go ahead, Houston. Apollo 8.

04 06 16 01	CC	Roger. Quad Able helium tank temperature has dropped very slightly and is looking pretty good to us now.
04 06 16 11	LMP	Thank you, Michael.
04 06 16 12	CC	Righto, and I've got a procedure for Jim I would like to read up. It involves bringing the LM and the CSM state vectors to the earth serve influence. Over.
04 06 16 27	LMP	Alright. Stand by.
04 06 16 29	CC	Okay.
04 06 16 34	LMP	He's getting his hat on now. Whose procedure is this, Michael?
04 06 16 41	CC	Oh, it's the summation of the opinions of all our experts down here. I got it from Mr. Colossus, Gunther Sabionski.
04 06 16 54	LMP	Very good. I want to make sure it wasn't an Aldrin special.
04 06 17 03	CC	I'm sorry you're broken up. Don't say again. (Laughter)
04 06 17 16	CMP	Merry Christmas, Bud.
04 06 17 25	CC	Yes, Merry Christmas up there, Jim. I've got a procedure when you are ready to copy.
04 06 17 31	CMP	Okay. I just got on my headset; just let me get a pencil and paper, and I will copy it.
04 06 17 36	CC	Okay.

04 06 17 58	CMP	Okay, Mike.
04 06 18 00	CC	Okay. The purpose is to bring the LM and the CSM state vectors to earth's sphere of influence. Step one: Verb 37 ENTER, 23 ENTER. Step two: At NOUN 70, at NOUN 70, load and register 1, 2, and 3 the following numbers. Register 1, 00002; register 2, five balls; register 3, 00210. Step 3: proceed on NOUN 70, NOUN 70. Step 4: proceed on NOUN 25, 25. Step 5: do not proceed on NOUN 18. Wait for 30 seconds; then do VERB 37 ENTER, 00 ENTER. End of procedure. Over.
04 06 19 29	CMP	Okay. As I understand that the reason for this procedure is to bring the LM and CSM state vectors back to the earth's sphere of influence; is that correct?
04 06 19 37	CC	That's correct.
04 06 19 42	CMP	Okay. To do it we go VERB 37 ENTER, 23 ENTER; and at the NOUN 70, we'll load and register 1, four balls 2; register 2, all balls; and register 3, two balls 210. We'll proceed on NOUN 70 and proceed on NOUN 25. We'll not proceed on 18. We'll wait 30 seconds, and we'll do a VERB 37 ENTER, 00 ENTER.
04 06 20 15	CC	That's affirmative. Apollo 8.

04 06 20 21	CMP	I'm just kinda curious, Mike; I thought this was done for us. I thought the computer took care of this little problem.
04 06 20 34	CC	Roger. Normally, it is done automatically, Jim; and had you done the P23's exactly as scheduled, it would have been, but there was some doubt P23 was stopped about 7 minutes prior to the transition point and just to be absolutely sure, we included this procedure. Over.
04 06 20 59	CMP	Okay. Tell Buzz I sure could use his eye-patch.
04 06 21 19	CC	Roger. I understand. Buzz had one on Gemini X, worked real well.
04 06 21 28	CMP	Mike, do you want me to do this procedure now?
04 06 21 31	CC	That's affirmative, Jim. Now at your convenience.
04 06 24 06	CC	Did you see guidance? Is the flag set?
04 06 24 10	CC	We're set, that's right.
04 06 24 50	CC	Apollo 8, Houston.
04 06 24 54	CMP	Go ahead.
04 06 24 56	CC	Thank you, Jim. We copied your DSKY work there, and it's looking just fine to us now.
04 06 25 03	CMP	Okay.
04 06 25 42	CMP	Houston, Apollo 8.
04 06 29 44	CC	Apollo 8, Houston.

04 06 29 50	CDR	You know, one thing you can pass on to the program office - something you might try working on right away is - -
04 06 30 00	CC	Can you stand by, Apollo 8?
04 06 30 02	CC	Apollo 8, can you stand by? We'll try to get you a better antenna; you're just about unreadable.
04 06 30 10	CDR	Alright.
04 06 30 18	CC	Apollo 8, Houston. We are right in between antennas and if you can wait about 5 minutes with your message, we can have better COMM then.
04 06 30 27	CDR	Roger.
04 06 33 44	CC	Apollo 8, Houston. Over.
04 06 33 49	CDR	Go ahead, Houston. Apollo 8.
04 06 33 51	CC	Okay. You're loud and clear now, Frank. Go ahead and say what you were saying about the program office.
04 06 33 57	CDR	They ought to get some moving out on some way to fix these windows. The three windows, the hatch window and the two side windows, really it's a shame, in fact, that they are almost totally unusable, because they got so gummed up.
04 06 34 17	CC	Roger. I sure agree. We copy so far on the windows that 2 and 4 are in excellent shape

and 1 and 5 are sort of mediocre and 3 is just about totally unusable.

04 06 34 34 CDR Three is totally unusable; 1 and 5 are unusable for any kind of photography.

04 06 34 39 CC Roger.

04 06 34 42 CMP And, Mike, that sure puts the CMP in a bad light, you know, when you can't see where you are going.

04 06 34 48 CC Yes. And when you're setting between two guys that won't tell you, too. (Laughter)

04 06 34 54 CMP That's right. You think they will share a window? No soap. You might also note the optics are very good visibility; so far, no coating at all.

04 06 35 04 CC Glad to hear that, Jim.

04 06 42 32 CC Apollo 8, Houston.

04 06 42 36 CDR Go ahead.

04 06 42 38 CC Roger. We copy Jim doing a P52, and I'm standing by with a maneuver PAD for mid-course 5 any time at your convenience.

04 06 43 31 CMP Okay. Ready to copy, Mike.

04 06 43 34 CC Roger, Jim. This is midcourse maneuver number 5, and it's a RCS/G&N, and it's 31700, not applicable, not applicable. Are you with me?

04 06 43 56 CMP With you.

04 06 43 58	CC	Good. 10359 5286, minus 00050, plus all zeros, plus 00001 000 334 001 five zeros, plus 00190 00050 014 00050. Are you still with me? Over.
04 06 45 14	CMP	Still with you.
04 06 45 16	CC	Good. 413020 183, Shaula, down 064, left 06, plus 0747, minus 16410 12988 36301 146 4640; north set of stars, Sirius and Rigel, roll 308, pitch 209, yaw 357. Remarks: use high-speed procedure with minus MA. Over.
04 06 47 00	CMP	Roger, Houston. MCC 5, RCS/G&N - are you with me?
04 06 47 08	CC	I'm with you, Jim.
04 06 47 13	CMP	31700, NA, NA, 10359 5286, minus 00050, plus all zeros, plus 00001 000 334 001, all zeros, plus 00190 00050 014 00050 413020 183, Shaula, down 064, left 06, plus 0747, minus 16410 12988 36301 146 4640; Sirius, Rigel, 308 209 357; use high-speed procedure with minus MA.
04 06 48 23	CC	Roger. And could you go to ACCEPT, please, and we're going to send you a P27 load consisting of a LM state vector and a target load for MCC 5.
04 06 48 37	CMP	Roger.
04 06 50 19	CC	Apollo 8, Houston. Over.
04 06 50 24	CDR	Go ahead, Houston. Apollo 8.

04 06 50 26	CC	Roger. We'd like to dump your waste water tank down to 25 percent; we'd like to do it before the midcourse, for tracking reasons. So if it is convenient with you, if you'll start right now, we'll dump on down to 25.
04 06 51 39	CDR	Roger. We'll get right with it.
04 06 51 41	CC	Thank you.
04 06 55 20	CC	Apollo 8, Houston.
04 06 55 24	CDR	Go ahead.
04 06 55 26	CC	Roger. We got those loads in and verified; you can go back BLOCK at your computer. And George Low says he's working on that window problem at 6, or spacecraft 104. You just happen to have the wrong spacecraft.
04 06 55 40	CDR	That's the wrong statement; we've got the right spacecraft. I'll clue you, if it keeps going this way for 2 more days, we've got not only the right spacecraft, but we've got the best spacecraft.
04 06 55 50	CC	It'll keep going.
04 06 57 13	LMP	Apollo 8. We're starting the dump now, Houston.
04 06 57 17	CC	Apollo 8, Houston. Over.
04 06 57 23	LMP	Okay. We're starting the waste water dump now.

04 06 57 26	CC	Okay, Bill. Thank you.
04 06 57 38	LMP	That's a blizzard.
04 06 57 42	CC	Roger. Understand.
04 06 58 33	CC	Apollo 8, Houston.
04 06 58 39	CDR	Go ahead, Houston.
04 06 58 41	CC	Roger. I need a Pop Romeo Dog on all three and a status report on the LMP.
04 06 59 01	LMP	Roger. The LMP's PRD hasn't moved an inch since we took off. And that's the one the CMP did have, still 0.64. And I just had about 5-1/2 hours sleep, and I'm in the process of scarfing up a meal; and I've been drinking lots of water, feeling good, and that's about it.
04 06 59 29	CC	Okay. And you got a PRD on the other two.
04 06 59 32	CMP	Yes. The CMP is ready to report. The CMP is reading 1.2 rem.
04 06 59 41	CDR	And the CDR: I got stuck with somebody elses, but mine reads now - my new one reads 2.02 rems. I don't know if there is a message there or not.
04 06 59 49	LMP	He's starting to glow in the dark.
04 06 59 55	CC	Yes. You should have hung on to the one you had. It sounded a little bit better. I copy left to right 2.02, 0.12, and 0.64. Over.

04 07 00 10	LMP	Roger.
04 07 00 13	CC	Thank you, sir.
04 07 00 17	LMP	What have they measured in our - what have they measured on that, I guess you would call it the VABABR, or VABD?
04 07 00 42	CC	We're sending the boy to the back room to find out.
04 07 00 51	LMP	Find out what it is, or what it's reading?
04 07 00 55	CC	First one and then the other.
04 07 01 02	LMP	We'll need both answers up here, too.
04 07 03 58	CC	Apollo 8, Houston.
04 07 04 02	CMP	Go ahead.
04 07 04 04	CC	Bill's VA and VR reading that he requested is 0.13. Over.
04 07 04 16	LMP	Roger. Look's like you've got a little discrepancy here.
04 07 04 25	CC	Yes, I agree.
04 07 04 39	LMP	You ought to give those guys a chance to go back to sleep and calibrate those things.
04 07 05 26	CC	Apollo 8, Houston. We've just passed 25 percent, and you can terminate your waste water dump, please.
04 07 05 31	LMP	Okay. Will do.
04 07 05 41	CDR	Believe it or not, our gage is 5 percent behind yours.

04 07 05 48	CC	Yes, John said that he has been noticing that.
04 07 07 23	CC	Apollo 8, Houston.
04 07 07 27	LMP	Go ahead, Houston. Apollo 8.
04 07 07 30	CC	Yes. We are going to switch antennas from Madrid to Goldstone in about 3 minutes. You should hear the glitch.
04 07 07 37	LMP	Thank you.
04 07 08 40	CMP	Houston, Apollo 8.
04 07 08 44	CC	Apollo 8, Houston. Over.
04 07 08 48	CMP	Roger. Just for information, would the perigee reading and NOUN 42 be such a big minus number for such a small burn? We are reading minus 03137 now.
04 07 09 03	CC	Roger. Understand; NOUN 42 perigee reads minus 03137. Over.
04 07 09 12	CMP	Roger. We are going to PROGRAM 30 after you give us the target load, and I didn't think there would be that much of a change for such a small burn.
04 07 09 20	CC	Roger. Stand by. We will check into it, Jim.
04 07 16 54	CC	Apollo 8, Houston. Over.
04 07 16 59	CDR	Go ahead, Houston. Apollo 8.
04 07 17 01	CC	Roger, Frank. We don't think there's any problem or any funnies in this perigee prediction of minus 03137. It's a Keplerian prediction, and it's not very accurate. Now we

		have taken your vector from the downlink and run it through a make-believe external DELTA-V maneuver down here, and we get precisely the correct answer. Over.
04 07 17 35	CMP	Roger. Understand that you figure just because of the conics solution that it comes up.
04 07 17 40	CC	That's affirmative. The Kepler solution is just pretty gross.
04 07 17 47	CMP	Okay. I was just kind of curious. I could see differences when we were talking about LOI burns, but this being such a short one, I thought it wouldn't be that much difference. I understand.
04 07 17 58	CDR	Mike, this is Frank.
04 07 18 00	CC	Go ahead.
04 07 18 03	CDR	You are monitoring and seeing if we get any inadvertent engine firing all the time, aren't you?
04 07 18 10	CC	Well, we can't tell when you're in low bit rate. When you're in high bit rate, that's right.
04 07 18 20	CDR	Okay if we crank up high bit rate and just have you take a checkout look at them?
04 07 18 26	CC	Okay.

04 07 19 03	CC	Apollo 8, Houston.
04 07 19 08	CDR	Go ahead.
04 07 19 10	CC	Roger. Since you're on OMNI D (Dog) at this time, we're sort of 180 out of phase for the high-gain lock antennas. As soon as we can get high-gain lock, then we'll - -

END OF TAPE

04 07 19 38	CDR	Okay. We will take the antennas and get on the high gain as soon as we can.
04 07 19 43	CC	Thank you.
04 07 26 49	CC	Apollo 8, Houston.
04 07 26 53	CDR	Go ahead, Houston. Apollo 8.
04 07 26 54	CC	Roger, Frank. We've done some more checking, and we confirm that that is the correct Keplerian prediction on NOUN 42 minus 03137, just like you said.
04 07 29 09	CDR	Thank you.
04 07 35 41	CC	Apollo 8, Houston.
04 07 35 46	CDR	Go ahead.
04 07 35 48	CC	Roger. We are going to be doing a ranging sequence; if we can eliminate voice for a couple of minutes, we would appreciate it.
04 07 35 56	CDR	Roger. We will.
04 07 35 58	CC	Okay.
04 07 42 41	CC	Apollo 8, Houston. Over.
04 07 42 46	CDR	Go ahead, Houston.
04 07 42 48	CC	Roger. Our ranging is complete, and we have been monitoring your thruster firings, and they show what appears to be very normal damp activities. Over.
04 07 42 59	CDR	Thank you. I guess it was associated with the water vent.
04 07 43 05	CC	Roger. Understand, Frank.

04 07 57 08	CC	Apollo 8, Houston. Over.
04 07 57 12	CDR	Go ahead, Houston. Apollo 8.
04 07 57 14	CC	Frank, we've got about 2-1/2 minutes to ignition, and we're still showing some of your SCS switches not set up as per checklist; specifically, rate LOW, deadband MINIMUM, and your BMAG mode at attitude one, rate two.
04 07 57 35	CDR	Okay. Thank you.
04 07 57 37	CC	And your manual attitude switches in RATE COMMAND.
04 07 57 44	CDR	Right.
04 07 58 49	CC	Apollo 8, Houston.
04 07 58 52	CC	MARK.
04 07 58 53	CC	One minute to ignition. Over.
04 07 58 58	CDR	Roger. We concur.
04 07 59 30	CC	Apollo 8, Houston.
04 07 59 32	CC	MARK.
04 07 59 34	CC	Twenty seconds to ignition.
04 07 59 39	CDR	Roger.
04 08 01 33	CMP	Houston, Apollo 8.
04 08 01 35	CC	Go ahead, Jim.
04 08 01 38	CMP	Roger. We burned on time, 14 seconds, attitude nominal. Our residuals were plus 2 in VG_X, minus 1 in VG_Y, nothing in VG_Z. Our EMS stopped about 6.2 and continued counting after the burn.
04 08 02 03	CC	Roger. Understand 14 seconds, burn on time, nominal attitude, two-tenths X, one-tenth Y,

and nothing minus one-tenth Y, and nothing Z; and you put 6.2 on the EMS, and it continued to count after the burn. Is that affirmative?

04 08 02 22 CMP No. We put the burn - we put the burn DELTA-V in the EMS, and after the burn, it was still counting.

04 08 02 31 CC Roger. Understand.

04 08 02 32 CMP Still counting up.

04 08 02 33 CC Understand.

04 08 03 31 CMP Okay, Houston. We transferred the state vector to the LM slot.

04 08 03 36 CC Roger, Jim. Thank you, and I still don't understand you on this EMS. Counted down from 5 to zero normally and then continued through zero in a negative way, and now it's reading minus 6.2? Is that affirmative?

04 08 03 52 CMP Roger. That's right. It was counting up when we shut it off. Last time I saw it, it was 6.9. Now Frank just put it on AUTO again with the DELTA-V function switch in DELTA-V, and it jumped six-tenths. Then he tried the second time, and it stayed at zero so we really don't know what the story is.

04 08 04 16 CC Roger. Understand you.

04 08 05 48 CDR Houston, this is Apollo 8.

04 08 05 51 CC Go ahead, Frank.

04 08 05 57	CDR	I guess you want us to resume PTC, right?
04 08 06 00	CC	Stand by.
04 08 06 29	CC	Apollo 8, Houston.
04 08 06 34	CDR	Go ahead.
04 08 06 35	CC	We'd like you to resume the PTC attitude, pitch 010, yaw 045; and then come out of it again for your P23 that you're scheduled for about another hour and 10 minutes, in another hour and 10 minutes.
04 08 06 55	CDR	Roger.
04 08 07 16	CDR	Mike, this is Frank. Is this TV still scheduled for 104:50?
04 08 07 22	CC	That's affirmative, Frank, if you can manage it.
04 08 07 27	CDR	Okay.
04 08 07 36	CC	How's it going with the TV, Frank? Are we - can the networks count on having it on schedule? Over.
04 08 07 44	CDR	Yes, we can have it on schedule. We don't have much to do, but we'll perform for you.
04 08 07 49	CC	Okay. We have a bunch of filter experts standing by if you need any advice.
04 08 07 55	CDR	Well, we're just going to have to just do it inside today because there are no good shots of the moon or the earth; the sun's too darn bright.
04 08 08 03	CMP	I think it's raining out there.
04 08 08 04	CC	Yes, that's what we thought.

322

04 08 09 57	CDR	Houston, Apollo 8.
04 08 10 00	CC	Apollo 8, Houston. Go ahead.
04 08 10 06	CDR	Roger. On this EMS, when I put it in DELTA-V, it was reading zero; then I switched to AUTO. Sometimes it will count to 19 or 20 feet per second. I guess that is what happened.
04 08 10 17	CC	Roger. Understand when you put it to AUTO, it maybe will keep counting up to as much as 19 to 20 feet per second.
04 08 10 27	CDR	Just when you put it to AUTO; it will start counting on some occasion, by itself.
04 08 10 31	CC	Understand.
04 08 21 26	CDR	Mike, we're ready when you are.
04 08 21 28	CC	We're ready.
04 08 21 35	CDR	Say again.
04 08 21 37	CC	Yes, we're reay, Frank. We're all squared away and eagerly standing by.
04 08 22 12	CC	You got your make-up on?
04 08 22 17	CDR	Yes. Have we got a picture?
04 08 22 21	CC	Negative, Frank.
04 08 22 43	CDR	How about now, Houston?
04 08 22 46	CC	Negatie, Frank.
04 08 23 19	CDR	We don't seem to have much luck today, but don't call for a repairman yet. It may be our camera here.
04 08 23 46	CDR	Any results yet, Mike?

04 08 23 49	CC	Negative, Frank. It may be that it hasn't warmed up properly.
04 08 23 56	CDR	Okay. We've had it on for a while. Are you getting our FM okay?
04 08 24 04	CC	Okay, Frank. There, we got it. It's coming in loud and clear. We look like we're looking at your hat and now the MDC.
04 08 24 18	CDR	Okay. Well, good afternoon. This is the Apollo 8 crew. And how is it focusing now, Houston?
04 08 24 27	CC	It's looking good. If you can hold the thing still, there's sort of a time delay. Any motion at all ruins our picture.
04 08 24 39	CDR	Tell me if there is any difference in it now.
04 08 24 42	CC	It's looking good now.
04 08 24 46	CDR	Okay, fine.
04 08 24 48	CC	It looks like you're okay, but somebody else is upside down.
04 08 24 54	CDR	Okay. That's right. That's Jim Lovell. What we thought we'd do today was just show you a little bit about life inside Apollo 8. We've shown you the scenes of the moon, the scenes of the earth, and we thought we'd invite you into our home. It's been our home at least for 4 days as you can see on the instrument panel. We mark off each day on the instrument panel.

We're four down, and we're working on the fifth day. Of course, we're all looking forward to the landing on Friday. Down here in the part of the spacecraft that we call the lower equipment bay, we have the President's adviser on physical fitness, Captain Jim Lovell, about to undergo an exercise program that we do every day. You notice that he floats around very freely. He just bumped his head on the optics, used for our navigating. He's working with an exercise device that's designed to keep the muscles in shape. Now another very important function of our spacecraft is the computer, and I thought you might be interested in seeing what we have here, the displays that give us all the information about our burn, about navigating, and about the velocity that we use during entry and retrofire on earth-orbital missions. You can see it's controlled by a DSKY, or similar to a typewriter keyboard, and the things that go in and out of that are absolutely miraculous. It's done a fantastic job for us, and Jim Lovell has done an excellent job operating it. Now another very important thing whether you're in space or the ground is eating, and I've asked Bill Anders to show you